Work Order ID 57911

April 20, 2010 10:02:08 AM

Item ID: D6005-128 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Crosstube Material 28

Start Date: 20/04/2010 **Start Qty:** ~~20.00~~ **Cust Item ID:**

Required Date: 20/04/2010 **Req'd Qty:** 20.00 **Customer:**

Reference:

Approvals: **Process Plan:** [illegible] **Date:** 10-4-20 **Tooling:** _____ **Date:** _____ **Run Start** **Stop**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	**Revision Nbr**								
D6005	Rev A								
100	PURCHASING	0.00							
Purchasing									
Purchasing	**Memo**	0.00							
	Issue P/O: 11717 a) Order as per Dwg D6005 b) Material: 2.750 x 0.375 wall 7075-T6/T6511 (WW-T-700/7 or ☐QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube c) Minimum ultimate tensile strength = 77 ksi d) Minimum tensile yield strength = 66 ksi e) Tolerance are per ASTM B210 (see details on Dwg D6005) f) Material certification required								
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
Packaging									
Packaging	**Memo**	0.00							
	Ensure material certification is attached								

BS 10-4-21

28

37

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Work Order ID 57911

April 20, 2010 10:02:08 AM

Item ID: D6005-128 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Crosstube Material

Start Date: 20/04/2010 **Start Qty:** 20.00 **Cust Item ID:**

Required Date: 20/04/2010 **Req'd Qty:** 20.00 **Customer:**

Reference:

Run Start **Stop**

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC6- Inspect dimensions to drawing	0.00				X37			
QC	**Memo**	0.00							
Quality Control	Ensure Material certification comply to Dwg D6005								
150	Identify as per dwg & Stock Location: LK	0.00							
Packaging	**Memo**	0.00							
Packaging									
160	QC21- Final Inspection - Work Order Release	0.00							
QC	**Memo**	0.00							
Quality Control									

5/10/08/06

COUNTED

AM 10-09-08

10/08/09

MF 10-8-9

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Picklist Print

April 20, 2010 10:02:12 AM

Work Order ID: 57911

Parent Item: D6005-128

Parent Item Name: Crosstube Material

Comments: IPP Rev:C□04.06.15□Added tolerance to Step 2□KJ/JLM
IPP Rev:D 08-09-23 fixe typo in dwg name DD verified by:EC

Start Date: 20/04/2010

Start Qty: 20.00

Required Date: 20/04/2010

Required Qty: 20.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6005-128P		Purchased	No			110	Each	0.0000	20.0000		4/8/4	32

Crosstube material

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

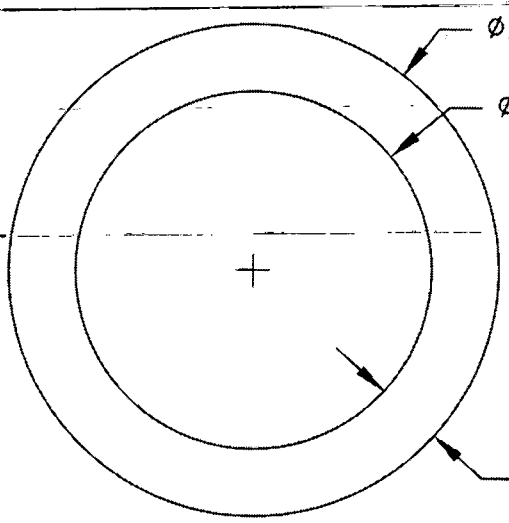
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CP	CP		
CHECKED	APPROVED	DRAWING NO.	REV. A
		D6005	SHEET 1 OF 1
DATE		TITLE.	SCALE
00.11.17		CROSSTUBE MATERIAL	1:1
A	00.11.17	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 57944
R1 10-11-20

NOTES

1) D6005–XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 128" LONG TUBE: D6005–128

2) MATERIAL: 2.750 OD x 0.375 WALL 7075–T6/T6511 (WW–T–700/7 OR QQ–A–225/9 OR QQ–A–200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.006 MEAN (±0.012 INCLUDING OVALITY)
WALL: ±0.015 MEAN (±0.038 INCLUDING ECCENTRICITY)
LENGTH: XXX +0.125/–0.000
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

DART aerospace
Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PO REPRINT

Purchase Order ID PO11717

Purchase Order Date 21/04/2010
PO Print Date 21/04/2010

Order From : VU-ALU001

ALUMINIUMWERK UNNA AG
UELZENER WEG 36, 59425 UNNA
GERMANY, GERMANY

Contact Name		**Buyer**	Brigitte Golden
Vendor Phone	303 755 5936	**Requisition Nbr**	
Vendor Fax	303 755 5672	**Tax Resale Nbr**	10127-2607
Vendor Account Nbr		**Terms**	Net 30
		Currency	USD
		FOB	

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAXED e-mail cm 10/4/21

Line Nbr	Reference / Revision ID / Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req. Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6005-128P	Crosstube material	21/06/2010 Yes	28.00 Each		$442.0000	$12,376.00

Nbr 37

Special Inst: As per Dwg: D6005 REV: A B#57911
128" long
Mat: 2.750 x 0.375 wall 7075-T6/T6511(WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube. Minimum ultimate tensile strength =77ksi, Minimum tensile yield strength =66ksi. Tolerance are per ASTM B210(see details on DWG D6005)

10/8/21

PO Total: **$12,376.00**

MATERIAL CERTIFICATION REQ'D UPON DELIVERY

No substitution or deviation without consent.
Certificate of Conformity or Material Certification required when applicable

Change Nbr: 2 **Change Date:** 21/04/2010

Packinglist ALUnna AG

ALUnna ref. no.	36396/1
Customer PO.	P.O.11717
Date:	07.07.10

Boxmarking:

Dart Aerospace / P.O.11717 / D6005-128
Made in Germany / Dest. Hawkesbury Ont, Canada

We hereby declare that the wooden packing material are totally free from bark and apparently free from live plant pests

Item no.	Box no.	OD (inch)	ID (inch)	Wall (inch)	Net Weight (lbs)	Tare lbs	Gross Weight	Pieces	lengths (ft)	Boxdimension Lengths (inch)	Width (inch)	height (inch)	Cast. / Heat No. Top	Pcs.	Cast. / Heat No. Middle	Pcs.	Cast. / Heat No. Bottom
1	1	2,750	2,000	0,375	1131	234	1365	31	11	151,575	22,441	22,441	3450/800916	4			3540/800916
1	2	2,750	2,000	0,375	218	152	370	6	11	151,575	22,441	11,417			3450/800916	6	
								37									
					1349	386	1735	37									

ALUnna TUBES

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde: *Client:* Dart Aerospace Ltd.

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer: *Cert No.: / No. du certificat:* 881/10

Bestellnummer: *Order No. / No. de commande* PO11717 / PO12020

Produkt: *Product / Produit:* Rohre nahtlos gepresst / *Tubes seamless extruded*

Auftrag: *Our Reference/Notre Reference:* 36396/1

Spezifikation: *Specification:* AMS - QQ - A - 200/11E; Spezifikation Dart Aerospace 6005

Werkstoff: *Alloy/Alliage:* 7075

Zustand: *Temper/État* T 6511

Abmessung *Size / Dimension* 2,750 INCH x 2,000 INCH x 0,375 INCH x 128,000 INCH
D6005-128 2.750 x 0.375 x 128

Kennzeichnung *Marking/Marquage:* ALUnna-Cert.No.881/10 7075 T6511 Cast No....-AMS-QQ-A-200/11-2.750"OD x 0.375"Wall-Heat Lot No.800916-ALUnna Order Conf.No.36396/1-1-P.O.11717

Lieferung *Delivered Material / Matérial délivre:* 37 pcs. 1349 lbs

Country of Manufacture: Germany
Products are in accordance with applicable RoHS

1. Chemische Analyse *Chemical Analysis / analyse chimique*

		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ Cast No.	min.			1,2		2,1	0,18	5,1						
	max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
3450/09		0,108	0,219	1,487	0,078	2,543	0,203	5,890	0,036	0,003	0,0181	0,0001	0,0012	0,0001

Hydrogen content: 0,11 **ccm/100 g Al** Elements without indication < 0,01 % **country of melt manufacturer: Germany**

3540/09		0,100	0,196	1,558	0,060	2,593	0,188	5,685	0,039	0,002	0,0291	0,0001	0,0013	0,0001

Hydrogen content: 0,10 **ccm/100 g Al** Elements without indication < 0,01 % **country of melt manufacturer: Germany**

2. Mechanische Eigenschaften *Mechanical Properties / Valeurs Mécaniques*

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min.	77,0	66,0				
max.						
1	88,450	82,070	9,0			800916 - 37 pcs.
2	88,305	81,635	8,0			

Cast No. 3450 - 10 pcs. / Cast No. 3540 - 27 pcs.

RMS outside 25 - max. 11,7 µ"

Ergebnis der Prüfungen: Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results: We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Résultats: Nous confirmons que la livraison a été controlée et correspond avec les conventions faites à la réception de la commande

ALUnna

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde: *Client:* Falcon Aerospace, Inc.

15851 Southwest 41st Street
FL 33331 Davie USA

Zeugnisnummer: *Cert No.: / No. du certificat:*

Bestellnummer: *Order No. / No. de commande* 79676

Produkt: *Product / Produit:* Tubes seamless extruded

Auftrag: *Our Reference/Notre Reference:* 36276/2

Spezifikation: *Specification:* AMS 4340D / ANSI H35.2 / acc. to Drawing No. 13503940 Rev B, EO-11109.2679 EO-11109.2696

Werkstoff: *Alloy/Alliage:* 7050

Zustand: *Temper/État* T 76511

Abmessung *Size / Dimension* 265,170 mm x 223,170 mm x 21,000 mm x 468,00 mm

Kennzeichnung *Marking/Marquage:* AWU - 7050 - T 76511 - AMS 4340 D - 262 MM X 19,5 MM - Lot 36276/2 Part No. 13503940

Lieferung *Delivered Material / Matérial délivre:*

	pcs.	lbs
	12	553

Country of Manufacture: Germany
Products are in accordance with applicable RoHS

1. Chemische Analyse — Chemical Analysis / analyse chimique

		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ Cast No.	min.			2,0		1,9		5,7			0,08			
	max.	0,12	0,15	2,6	0,10	2,6	0,04	6,7	0,06		0,15			
83009		0,07	0,12	2,19	0,02	2,48	0,01	6,26	0,03	0,01	0,12			

Hydrogen content:<0,10 **ccm/100 g Al** Elements without indication < 0,01 % **country of melt manufacturer: Germany**

2. Mechanische Eigenschaften — Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A 4D %	Hardness HB	Electrical conductivity
min.	79,0	69,0		7,0		
max.						
1	81,635	73,080	12,0	13,8		22,2
2	81,200	72,645	12,0	13,8		

ASME Y14.5M : not applicable

ASME E 380 : not applicalble

Ergebnis der Prüfungen: Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results: We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats: Nous confirmons que la livraison a été controlée et correspond avec les conventions faites à la réception de la commande

ALUnna TUBES

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 I Certificat de Reception 3.1- DIN EN 10204:2005

Kunde: *Client:* Falcon Aerospace, Inc.

15851 Southwest 41st Street
FL 33331 Davie USA

Zeugnisnummer: *Cert No.: / No. du certificat:*

Bestellnummer: *Order No. / No. de commande* 79676

Produkt: *Product / Produit:* Tubes seamless extruded

Auftrag: *Our Reference/Notre Reference:* 36276/1

Spezifikation: *Specification:* AMS 4340D / ANSI H35.2 / acc. to Drawing No. 13503940 Rev B, EO-11109.2679 EO-11109.2696

Werkstoff: *Alloy/Alliage:* 7050

Zustand: *Temper/État* T 76511

Abmessung *Size / Dimension* 265,170 mm x 223,170 mm x 21,000 mm x 468,00 mm

Kennzeichnung *Marking/Marquage:* AWU - 7050 - T 76511 - AMS 4340 D - 262 MM X 19,5 MM - Lot 36276/1 - Part No. 13503940

Lieferung *Delivered Material / Matérial délivre:*

	pcs.	lbs
	69	3174

Country of Manufacture: Germany
Products are in accordance with applicable RoHS

1. Chemische Analyse *Chemical Analysis / analyse chimique*

		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ Cast No.	min.			2,0		1,9		5,7			0,08			
	max.	0,12	0,15	2,6	0,10	2,6	0,04	6,7	0,06		0,15			
83009		0,07	0,12	2,19	0,02	2,48	0,01	6,26	0,03	0,01	0,12			

Hydrogen content:<0,10 **ccm/100 g Al** Elements without indication < 0,01 % **country of melt manufacturer: Germany**

2. Mechanische Eigenschaften *Mechanical Properties / Valeurs Mécaniques*

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A 4D %	Hardness HB	Electrical conductivity
min.	79,0	69,0		7,0		
max.						
1	80,330	71,630	12,0	13,8		22,3
2	80,475	71,630	12,0	13,8		
3	80,475	71,630	12,0	13,8		
4	80,330	71,485	12,0	13,8		

ASME Y14.5M : not applicable

ASME E 380 : not applicalble

Ergebnis der Prüfungen: Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results: We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats: Nous confirmons que la livraison a été controlée et correspond avec les conventions faites à la réception de la commande